

CLAIMS 1 to 9 (as amended during Chapter II procedure)

1. An electrophoresis device with a plurality of separation channels (S) that can be separately loaded with samples, which are each connected with a sample channel, from which samples can be injected into the respective separation channel during exposure to an electrical field, characterized by the fact that the sample channels are interconnected, thereby forming a shared injection channel (I), which intersects the separation channels (S) at crossing points, and whose ends have electrodes (E3, E4) for generating the electrical field exposure, wherein the injection channel (I) has an exposed application area (A) adjacent to each separation channel (S) on a predetermined side of the respective crossing point, which application area (A) being designed for taking samples by means of a micro-dispenser.
2. The electrophoresis device according to claim 1, in which the injection channel (I) has channel expansions at the application areas (A).
3. The electrophoresis device according to one of the preceding claims, in which the injection channel (I) for each separation channel has a molecule trap (M) on the side of the respective crossing point lying opposite the respective application area (A).
4. The electrophoresis device according to claim 3, in which the molecule trap (M) is a channel expansion, a semi-permeable membrane or a three-dimensional, porous structure.
5. The electrophoresis device according to one of the preceding claims, in which the separation channels (S)

and the injection channel (I) are incorporated on a carrier chip (C), which is part of an electrophoresis chamber (K) with buffer reservoirs (P1, P2) each with one electrode (E1 or E2).

6. The electrophoresis device according to claim 5, in which the carrier chip (C) is designed for disposable use and can be detached from the electrophoresis chamber (K).
7. The electrophoresis device according to one of the preceding claims, which is part of an analyzer, which has at least one micro-dispenser to supply the sample on the application areas (A) of the injection channels (I).
8. A procedure for using an electrophoresis device according to one of the preceding claims, characterized by the fact that the sample channels are loaded with samples by means of a micro-dispenser, wherein the samples are introduced into the injection channel (I) near the crossing point between the injection channel (I) and one respective separation channel (S) for purposes of sample separation, and transferred into the separation channel by exposing the injection channel to an electrical field, with electrophoretic separation taking place in this separation channel.
9. The procedure according to claim 8, in which the samples are electrically concentrated prior to separation at predetermined zones at the beginning of the separation channel.